

What is claimed is:

1. An analyzing apparatus comprising:

X-ray measuring means for applying X-rays to a sample and detecting X-rays generated by the sample;

gas-analyzing means for analyzing gas generated by the sample;

sample-holding means for holding the sample at a position which is common to the X-ray measuring means and the gas-analyzing means;

sample temperature-controlling means for controlling a temperature of the sample; and

control means for controlling the X-ray measuring means and the gas-analyzing means, causing the same to detect the X-rays and analyze the gas at the same time.

2. An analyzing apparatus according to claim 1, wherein the gas-analyzing means is a mass spectrometer capable of measuring the mass number of the gas.

3. An analyzing apparatus according to claim 1, wherein the sample-holding means holds the sample and is arranged on the X-ray path in the X-ray measuring means, the X-rays are applied to the sample held in the sample-holding means, the X-rays generated by the sample are emitted outside the sample-holding means, and the gas generated from the sample are discharged outside the sample-holding means.

4. An analyzing apparatus according to claim 2, wherein the sample-holding means holds the sample and is arranged on the X-ray path in the X-ray measuring means, the X-rays are applied

to the sample held in the sample-holding means, the X-rays generated by the sample are emitted outside the sample-holding means, and the gas generated from the sample are discharged outside the sample-holding means.

5. An analyzing apparatus according to claim 4, wherein the sample-holding means has;

an annular member that has a space for holding the sample,
a pair of shield members that contact the front and back sides of the annular member and shield the space from outside,
and

a gas passage that connects the space in the annular member to the space outside the annular member.

6. An analyzing apparatus according to claim 5, further comprising pressing means that presses the shield members onto the annular member.

7. An analyzing apparatus comprising:

X-ray measuring means for applying X-rays to a sample and detecting X-rays generated by the sample;

gas-analyzing means for analyzing gas generated by the sample;

sample-holding means for holding the sample at a position which is common to the X-ray measuring means and the gas-analyzing means; and

control means for controlling the X-ray measuring means, causing the same to detect the X-rays, in accordance with the results of analysis performed by the gas-analyzing means, or for controlling the gas-analyzing means, causing the same to

analyze the gas, in accordance with the results of measuring performed by the X-ray measuring means.

8. An analyzing apparatus according to claim 7, which further comprises sample temperature-controlling means for controlling a temperature of the sample, and in which control means changes a condition of controlling the temperature of the sample, in accordance with results of the measuring performed by the gas-analyzing means and/or results of the measuring performed by the X-ray measuring means.

9. An analyzing method comprising the steps of:

placing a sample at a position which is common to X-ray measuring means and gas-analyzing means;

applying X-rays to the sample and detecting X-rays generated by the sample, thereby to measure the X-rays;

analyzing gas generated by the sample at the same time the X-ray is measured.